AMERICAN
JOURNAL OF SURGERY

VOL. XXXVI. JANUARY, 1922 No. 1

NOTES ON ABDOMINAL HERNIA.

LOUIS FRANK, M.D., F.A.C.S.,
LOUISVILLE, KY.

Inguinal hernia is much more common than the other varieties, being seen approximately as often as, if not oftener than, all the others combined. In a paper by Judd (1908) it is stated that there had been performed at the Mayo Clinic 1,652 operations for radical cure of inguinal hernia in 1,429 individuals. Of this number 1,451 were of the indirect type, and 183 were of the direct type, of which we shall have more to say later. In 230 instances the hernia was double. This is explained by Judd, in comparing his cases with those of Coley, by the fact that the larger number of patients seen in the clinic were adults, whereas Coley's cases occurred in children.

Ten years later, as reported by Masson, there had been operated at the clinic, including the series mentioned by Judd, 7,016 cases; of these 4,364 were inguinal, about 47% occurring on the right side, about 33% on the left, and about 20% being bilateral. It is interesting to note that in Masson's group there were 330 operations for recurrences; of these 258 had one previous operation, 44 had two, 20 had three and 8 had four previous operations for relief.

In our own group of cases, taking the last one hundred, we have found that 60% were right oblique hernias, 24% left oblique; four direct, of which three were on the right and one on the left side; and 12% were bilateral. During this same period, and not included in these one hundred cases, we find five inguinal hernias in which exit is not mentioned as to side or character, four femoral hernias, one obturator hernia, four sliding hernias, and one diaphragmatic hernia. In our group of one hundred cases we find four operations for recurrences, one patient having had two previous operations. We also find that four of the individuals had undescended testicles; in one this lack of descent was bilateral. How many were strangulated in our own group or simply incarcerated we have not determined, but we know that several of these types were seen. Of these on hundred cases only one patient died and this from sepsis.

During the same period there came under our observation 43 ventral hernias, 26 of which were umbilical, a number of these being accompanied by diastasis of the recti muscles—another interesting condition for observation and discussion—and 17 being of the post-operative or incisional type. Just how our own figures compare with those of the Mayo Clinic and of Coley and other operators with large series of cases, we do not know, but the percentages may be easily determined.

Of the various types, femoral hernia is probably the next most frequent to inguinal hernia, and it occurs in the female more commonly than in the male. This is explained by the difference in conformation of the bony pelvis. It is the common conception that femoral hernia occurs in women more often than inguinal hernia, but this is a mistake, as in any group of hernias in women the inguinal type, just as in the male, is found to comprise the greater number.

It is now the accepted belief that abdominal hernias exist potentially from birth and that a strain simply forces the intestine or other contents into a preexisting sac. This view is strengthened by the fact that not infrequently the hernia is bilateral. In many cases it is well to repair both sides at the same operative séance. We have seen cases which come to operation for rupture on the right side where the left side when opened revealed a sac as large as, and occasionally larger than, the one on the ruptured side.

If we will recognize the fact that hernias are of different types, that they occur in individuals of different ages, physique and muscular development, that they have been subjected frequently to maltreatment by the application and long wearing of trusses, and if we will further take into consideration the fact that many surgeons do not adapt their operation to the particular type of hernia, i. e., whether direct or indirect, but follow one set plan in all hernias, we may then readily understand the cause of recurrence in many instances. In our own group of cases mentioned in the foregoing we had only one recurrence, this in an elderly individual who had worn a truss for many years and upon whom we did the so-called anatomic or Ferguson operation for cure. Direct hernias are the ones in which recurrences are most frequent following operations. In the Mayo Clinic the type of operation seems to have little, though it

does have something, to do with recurrence. In a study of their 7,000 cases there was less than 1% of recurrences in those cases in which the cord was transplanted, i. e., where the Bassini or some similar type of operation was performed. Where the so-called anatomic or Ferguson operation was done there was a little more than 1% of recurrences. This latter operation does not contemplate transplantation of the cord; in fact, in doing this type of operation the cord is not lifted from its bed and may not even be seen. In Coley's report there were following the Bassini operation 0.6% of recurrences, whereas following the anatomic or Ferguson operation there were 4% of recurrences. While this is not a very great difference, it does mean that the type of operation must be adapted to the particular case.

In the simple type of indirect inguinal hernia in a strong, healthy individual who has worn no truss or if so for only a short time, we believe it makes very little difference which of these two types of operation or their modifications is performed, there will or should be not more than 1% of recurrences. This we can tell our patients absolutely, and we believe it is on this account that many doctors are prone to say to their patients that recurrences are practically not 1%, and to promise an almost certain cure in all cases. As a matter of fact, however, in the elderly individual or one with undeveloped musculature where a truss has been worn for a number of years, is becoming painful, irritating and inconvenient, operation for relief is not always followed by brilliant results unless particular pains are taken to guard against possible recurrence. It is a fact that this type of patient, i. e., one with poorly developed abdominal musculature, is difficult to cure though we believe that all of them can be cured. However, some of them may have a recurrence, or even two or three, before the cure is rendered permanent.

Where the hernia has existed for such a long time that the opening has become so large that the internal and external rings are almost opposite, and in which, when the finger is introduced into the opening it comes into contact with the rectus muscle, we also have difficulties to contend with and should not be too prone to promise the patient an absolute cure without danger of recurrence. In this type it will probably be necessary to modify any of the typical operations, or it may become necessary to split the sheath of the rectus as recommended by Bloodgood and use it to reinforce the canal, just as is so often necessary and desirable in operating for direct hernia.

Direct hernias are also difficult of permanent cure, and if the surgeon follows one of the recognized type operations, such as the Bassini, Andrews, or Ferguson, without modifying it to meet the particular character of the direct hernia with which he is dealing, he is very apt to have the patient return within six months with recurrence. We may say that it is a matter of common observation that hernias which recur within six months do so on account of the type of operation which has been performed or of infection. It is also well to bear in mind that more than one-half of the recurrences which we see are in patients over fifty years of age; and we would also call attention to the fact that only about 20% of hernias are operated upon beyond this age. About 90% of the recurrences are within the first year and 70% recur within the first six months. Masson further calls attention in his most excellent article to the difficulties of effecting permanent cures in aged male patients, and in these individuals he recommends removal of the testicle and the cord on that side so as to permit of complete and perfect anatomic closure. In women this difficulty with the cord is of course not encountered, and instead we have the round ligament to contend with. This should always be attached at the internal ring with a transfixing suture to prevent the uterus from getting out of place and giving rise to other symptoms.

Anesthesia, we believe, need not contraindicate surgical procedure even in aged individuals, as both inguinal and femoral hernias are susceptible of operation under local anesthesia. As a matter of fact, the ideal place and the ideal operation for local anesthesia is in the operation for hernia of either of the types just mentioned. We have operated upon a number of individuals under local anesthesia without the slightest disturbance or the least reaction. Very recently we operated upon two elderly women, one 86 and the other 74, under local anesthesia without either of them giving expression to the slightest pain or discomfort. The ilio-inguinal-hypogastric nerves are exposed and blocked direct. All sensation along the distribution of these nerves is at once abolished and we can then complete any procedure that may be necessary in this region.

A few words as to the cure of femoral hernias: These are sometimes difficult of differentiation from inguinal hernias; but this is of no moment as even should incision be made and the inguinal canal opened, the hernia can be dealt with as a rule from within just as well as from without. Following the plan of Ochsner our own technic is never to suture the

femoral ring unless it has been deformed or unless it has become necessary to make an incision as a result of strangulation of the hernia. We have never seen a recurrence of any femoral hernia that we have operated upon and in none has any attempt been made, except under the circumstances mentioned, to close the ring.

Since Mayo introduced his operation for the cure of umbilical hernia we have been able to promise these patients practically as much as we may a patient with simple indirect hernia, in other words, a very slight danger of recurrence. In our own series of cases there has been one with partial recurrence and this was of the incisional type. In our group there were four cases, one bilateral, of hernia, accompanied by non-descent of the testicle. All of these four have been cured and so far as we have been able to ascertain have remained well with their testes in the scrotum. An undescended testicle either lying in the canal or just at the external ring and outside the canal is always accompanied by hernia, and at the time of operation for relief of the undescended testicle the hernia should also be operated. In our experience the testicle has always been easily replaced by the procedure of Bevan.

In considering the management of strangulated or incarcerated hernia the dangers of delay in operation cannot be too strongly accentuated. The time is past when irreducible hernias should be subjected to taxis. The only place where any attempt should be made to reduce a strangulated hernia is on the operating table with the patient under an anesthetic and after dividing the structures with the knife. More than once have we seen a hernia reduced and yet the symptoms persisted, and while at operation the sac, the intestine and everything else were found inside of the abdominal cavity, the contraction at the neck of the sac continued to constrict and the intestine was gangreneous. The dangers of delay in operating upon irreducible hernias are so self-evident that they require no discussion. In operating upon such cases it may be necessary to resect the intestine, though if the patient is in extremis, or an elderly individual, we have found it better to simply make an artificial anus, and at a later sitting complete the operation by resection and closure of the opening thus established. For strangulated femoral hernia trans-peritoneal operation is undoubtedly of very great assistance as we know from practical experience.

In discussing the technic of the inguinal hernia operation we would decry strenuous efforts to free a very adherent sac; it is far better to free as much of the sac as we can near its neck and after reduction of the intestine to ligate the sac at its proximate portion and leave the distal end open, a course which in our hands has given no trouble whatsoever. In ligating the sac proximally we believe it is always well to transfix it; then without unthreading the needle to carry the same suture well upward under the conjoined tendon and fasten the sac so as to turn its neck upward. This eliminates absolutely the funnel-like process which is so potent in the production of hernia. The method was first advocated by Kocher. If the cord is thick it is well to trim away the cremaster muscle and to ligate some of the cord veins. Great care, however, must be exercised to avoid wounding the artery or the vas. All fat should be removed from about the cord before the closure begins, and the canal must be absolutely free and clean. The danger of injury to the ilio-inguinal and ilio-hypogastric nerves must not be forgotten. This may come from sectioning, by making a rapid incision, or through improper suturing, i. e., so placing the sutures as to engage the nerves in their bite. Attention must be given this detail as it is not an insignificant one by any means.

No. 2 chromic catgut in our hands has always answered every purpose as suture material and it should be tied only tight enough to approximate the conjoined tendon to Poupart's ligament. Tight tying may tear the fascia of Poupart's ligament, it always strangulates the tissues, producing necrosis, mild though it may be, and thus interferes most potently with the healing process. If the transversalis and internal oblique can be held in apposition to Poupart's ligament for twenty-one days healing occurs. If the blood supply is interfered with by tightly tied sutures, no matter how long they may remain, the canal will be weak at those points. It is very important that one or two sutures be placed above the internal ring as advocated by Coley, otherwise it is possible for the ring to split upward thus permitting recurrence. Hemostasis must be complete, and by this we mean absolute; every cut vessel, no matter how small, must be tied. For this purpose we prefer Belding Bros. black silk No. A or No. E. Waxed, this makes an admirable ligature material, is cheap and has never in our hands given the least trouble.

Umbilical hernias we have always closed by the Mayo method since we have known of it. In femoral hernias we follow the method of closure advocated by Ocshner, i. e., not to suture the fascia. In the rare instances where we have thought it advisable to close the ring the pursestring suture has always been used.

In direct hernias the rectus muscle must be used

to block the opening. We believe this method was first advocated by Bloodgood. It is about the best way known to prevent recurrence of these hernias. Direct hernias are the most frequent to recur for the reason that the muscle is "thinned out" at this point and there is nothing to prevent recurrence unless we make use of the rectus. Masson "whips in" the sac with sutures, and this we believe is a very good plan.

In diastasis of the recti muscles which is so frequently found in child-bearing women with or without umbilical hernias, we have followed the procedure recommended by Coffey of splitting the fascia and turning it toward the median line closing by the process of imbrication. Gibson, of New York, has found splitting of the external fascia of the rectus well out to one side a most efficacious method of effecting closure in large post-operative incisional hernias. We have used this method and in our hands it has been most satisfactory. Filigree we would merely mention to condemn, as there is no place for it in the radical cure of hernia.

We are not infrequently asked: "When should a child be operated upon for hernia?" Our plan of treating an infant with umbilical or inguinal hernia is to use a well-fitting and properly adjusted truss in the hope that with muscular development the hernia will close early in life. This method of treatment requires much attention; the child should never be without the truss even while being bathed; and it is a most difficult plan to follow. Should a cure not be effected, the child is operated upon at about three or four years of age, i. e., just as soon as its intelligence is sufficient to obviate the danger of soiling the dressings. Needless to say, strangulated or irreducible hernias should be operated upon at once no matter what may be the age of the individual.

A few words about the dressing immediately after operation: Our dressing consists of a few layers of gauze held in place by adhesive plaster or a well-adjusted spica. Under no circumstances should a large pad be placed over the incision and held in place. The pressure produced by such a pad on the outside of the abdominal wall and the weight of the viscera inside causes marked interference with nutrition of the muscles and in consequence healing is delayed or impaired. Simply enough dressing to cover the wound nicely is all that is required. Under no circumstances should a truss be used post-operatively. This may seem an unimportant feature, but we have seen patients with recurrences which it seemed certain were due to the post-operative use of a truss which had been advised by their surgeon. If the operation is a success, there is no need for a truss; if a truss is to be worn post-operatively, why operate?

Patients operated upon for the cure of hernia should be kept in bed two or three weeks, depending upon the size of the hernia, the age and musculature of the individual. They should be advised as to the resumption of their duties and warned against violent exercise or putting too much stress upon the wound before two or three months have elapsed. Even then the slightest defect in the closure may result in recurrence. We believe, however, that with the operation properly performed, the patient properly dressed, kept in bed a sufficient length of time, due caution used as to the resumption of exercise and the return to strenuous labor, that there should be not more than one per cent. of recurrences. This, with a mortality practically nil, should make it our duty to advise every patient with hernia to submit to operation.

ADENOCARCINOMA OF THE BLADDER.

ROBERT H. HERBST, M.D.,
and ALVIN THOMPSON, M.D.,
CHICAGO, ILL.

Tumors similar to the one we are here reporting have been designated by various names, given them in some cases apparently because of their predominating gross characteristics. The following names have been noted: adenocarcinoma, colloid cancer, mucous cancer, gelatinous cancer, adenoencephaloid cancer and cylindrical-celled carcinoma.

The total number of cases reported is very small compared with the total number of bladder tumors. Scarcely a half-dozen cases have been reported in the last ten years.

It is difficult to ascertain the percentage of bladder carcinomas that belong to this type. In 369 bladder tumors analyzed by Gardner[1] in 1915, 6 were diagnosed adenocarcinoma or 1 2-3 per cent. of all the tumors in this group, which included both benign and malignant growths. The average age of the cases which we were able to collect was about 48½ years.

A. B., a male, 55 years old, had been free from urinary symptoms until February, 1920. He then began to have slight pain at the end of urination and had a short attack of hematuria. From that time his symptoms had become progressively worse. He complained of difficult and painful urination, frequency day and night, noctural incontinence, pain in the lower abdomen and rectum and attacks of hematuria which became more frequent and more prolonged, being constant at the time we first saw him in October, 1920. He had become moderately anemic and had lost some weight.

His past history was negative. He had been remarkably well until this present illness.

He comes of a large family, having seven brothers and seven sisters, all living and well. His father died at the age of 80 and his mother at 82. There is no history of cancer or tuberculosis in the family.

Physical Examination. The general physical examination was negative. By rectal palpation the prostate was normal in size and consistency, the seminal vesicles palpable but soft.

Laboratory Findings. The urine contained blood, pus and numerous epithelial cells. Blood examination showed a slight anemia. Blood pressure, systolic 178, diastolic 110. *X*-ray examination of the urinary tract showed normal kidney outlines and no evidence of calculus.

Cystoscopy. The first two attempts at cystoscopy

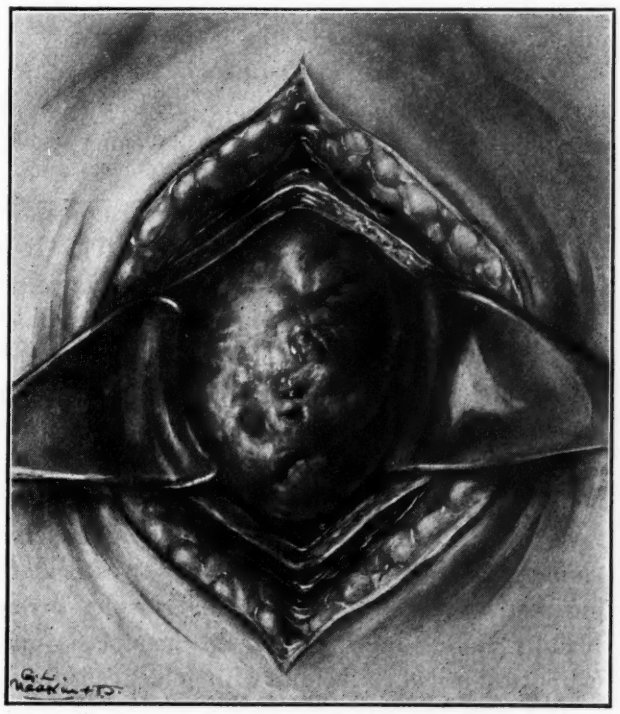


Fig. 1. Shows tumor projecting from fundus and occupying the cavity of the bladder.

were fruitless on account of the excessive bleeding. The third attempt, after keeping the patient in bed several days, was a little more successful, showing a mass which appeared to involve the anterior wall of the bladder. The surface was necrotic in places and on account of its location it was impossible to outline the extent of the tumor.

Operation. A suprapubic cystotomy was performed. Upon opening the bladder, a large tumor could be seen projecting from the fundus. It was about the size of a small pear and was attached to the postero-lateral wall about 2 cm. from the internal urethral orifice, slightly to the right of the median line. On passing the finger around the pedicle to determine its insertion, the tumor separated from its attachment to the bladder wall. A mild degree of bleeding ensued which was controlled by packing.

There was no evidence of any other growth within the bladder nor was there any demonstrable infiltration of the bladder wall or bladder neck. The site of the tumor was marked by a small linear defect in the mucosa.

The pedicle, which was a very thin band of tissue, separated so readily that it was difficult to understand why the separation did not occur spontaneously during some body movement.

Post-operative. Convalescence was uneventful and rapid. Shortly after the operation, cystoscopic examination showed a slight thickening of the bladder wall at the former site of the tumor. This had the appearance of edema rather than of an infiltration. Nevertheless, as a prophylactic measure, fifty milligrams of radium screened with 1.4 mm. of gold was applied to this area for ten hours.

About one month later another cystoscopic examination showed this area to have been diminished in

Fig. 2. Shows thin pedicle and its attachment to bladder wall. Insert A shows small linear defect in bladder wall following removal of tumor.

size, being about ½ cm. in diameter. This was fulgurated.

We are indebted to Dr. Homer K. Nicoll, pathologist to the Presbyterian Hospital, for the following pathological report:

TUMOR FROM BLADDER.

The gross specimen shows a roughly egg-shaped tumor mass, which after fixation measures 8 cm. x 5 cm. x 4 cm.

It is irregularly constricted about the middle portion and the ends are partially lobed with two deep clefts. The mass is firm and elastic throughout and tears only with considerable difficulty. The surface is rough, with small nodules, and in a few areas has a granular appearance. The tumor as a whole is greyish-white in color with numerous areas of reddish-blue discoloration from hemorrhage and necrosis.

Cross section of the tumor reveals no cysts but several large areas of marked softening and pulpy tissue, most of which are slightly colored with blood. There is a dense fibrous central stalk with short branches and the peripheral two-thirds is somewhat lobulated, although the lobes seem fused together. Many regions present a glistening appearance, with alternating areas of opaque and clear substance, producing a sago-like structure.

Microscopically, the tumor is composed of densely packed alveoli of moderate and varying size, with an interlacing and densely vascular supporting framework. The branchings of this stroma do not resemble those of the ordinary papilloma. The alveoli show no tendency to lumen formation and are made up of cells which appear homogenous in type but vary greatly in size. The cells are very irregular in shape and arrangement and do not appear to have any typical position with respect to the alveolar walls.

The nuclei are usually eccentric and are rather large and irregularly oval or crescentic. They are stained quite deeply and in the larger cells show marked trabeculation. A moderate number of mitotic figures are observed. The cytoplasm of the larger cells is stained rather deeply with eosin and is non-granular. There is very extensive degeneration of the larger cells. Many contain large clear areas which appear to be composed of mucus; others are as large, but contain more dense acid-staining material which is hyaline in appearance; and still others show single or multiple small, round basic-staining bodies in the degenerated areas. These last differ from the common "bird's eye" inclusions in that they rarely show any clear zone around the inclusion.

The larger inclusions, resembling mucus, vary in diameter from 4 to 7 microns, and the smaller basic-staining bodies from 0.5 to 2.0 microns. A few giant cells are observed with from 4 to 6 nuclei.

The appearance of the tumor would seem to indicate that it originated in glandular epithelial structures rather than from the ordinary bladder epithelium, and the extent of mucoid degeneration may indicate an origin from the small mucous glands of the bladder wall.

Glandular tumors of the bladder, both benign and malignant, while quite rare, have stimulated much speculation and study concerning their origin, as glandular structures in the bladder wall are rather scarce and rudimentary. However, glandular structures are found in the bladder wall according to many competent observers.

Bridoux[2], in reporting a case of adenoma, has quoted several histologists' opinions concerning glands and glandular tumors of the bladder, e. g., Henle, who describes glands derived from the prostatic urethra; Witzark and Kuster, who consider adenoma of the bladder as a glandular neoformation of this organ; and Albarran, who describes simple glands both in the trigone and throughout the bladder wall.

Chute and Crosbie[3] call attention to the similarity between adenocarcinoma of the bladder and of the intestinal tract, especially of the rectum.

They describe the embryonal development of the bladder, and as both the bladder and rectum are derived from the same embryonal structure, they think it is possible that cells which should properly form rectal mucous membrane might become cut off and lodged in the bladder wall.

Therefore, they contend that when these cells become cancerous they should retain the characteristics of the cells of the rectal mucous membrane.

Virchow and Aschoff, quoted by Ewing[4], regard these glands of the bladder respectively as aberrant prostatic glands and as urethral glands.

Ewing[4] states that in cystitis cystica many of the invaginated epithelial tubules are lined by cylindrical cells and the modified epithelium develops secretory tendencies.

De Korte[5], who reported a case of adenoma of the bladder, discusses its probable origin. This tumor, however, was in the wall of the bladder between the mucosa and peritoneum. He believes that it arose in the bladder wall near the peritoneal surface. He states: "It seems feasible to explain the tumor as arising either from aberrant hind gut cells or from cells derived from the allantois which have not undergone the usual normal involution."

De Korte quotes the following from a personal communication from Adami: "It deserves remembering that there are conditions under which ordinary bladder epithelium may undergo metaplasia into a cylindrical-celled epithelium with goblet cells."

The cases of adenocarcinoma of the bladder reported in the literature, while conforming to the same general type microscopically, are quite variable in their gross characteristics.

Alexander[6] reported a case in which there were three small gelatinous-looking papillary elevations upon the posterior wall of the bladder about two inches above the trigone. He comments on their similarity to the so-called malignant adenomas found in the stomach, intestines and uterus.

A case reported by Green[7] was palpable just above the symphysis, was about the size of an orange and not connected with skin or muscle. Cystoscopically, it was found to be growing in the bladder wall and not into the bladder. At the top of the fundus in the median line a small orifice, 3 mm. in diameter, could be seen. From this orifice a gelatinous substance exuded into the bladder. Microscopic examination

showed a typical glandular arrangement of columnar cells in alveoli with many spaces filled with degenerated mucoid material.

Somewhat similar was Barringer's[8] case. There was a firm suprapubic tumor extending to within two inches of the umbilicus. It was not fixed. Cystoscopically, it showed as a tumor the size of a small orange pressing in the vortex of the bladder. The overlying mucous membrane was normal except at one spot where it was thrown into folds and reddened. Ewing describes the microscopic sections as showing the structure of a cystic adenocarcinoma with advanced gelatinous degeneration which had destroyed most of the tumor cells. He thinks it probable that it originated from some extravesicular tissue rest and suggests that the allantoid ducts seem to be the most natural source of such a tissue rest. This tumor was chiefly extravesicular, being merely attached to the wall of the bladder and invading it only slightly.

The case of Chute and Crosbie[3] was described as a mass about the size of a silver quarter-dollar with a necrotic center. The edges were more or less finely branched. It did not have the typical appearance of an infiltrating bladder growth nor, on the other hand, was it typically papillomatous.

Sharp, quoted by Chute and Crosbie, reported a case in which the whole bladder wall was thickened and had a semitranslucent appearance on section. Stoerck, also quoted by Chute and Crosbie, described an adenocarcinoma which was a flat tumor arising from the trigone.

These tumors have been found in many locations. They have been reported in the trigone, the fundus, the posterior wall of the bladder, about the urethral orifice, covering the whole bladder wall, within the bladder wall, and in extrophy of the bladder.

Both clinically and from their microscopic characteristics they seem to be very malignant. Recurrences have occurred in the bladder and metastases have been found in retroperitoneal and mesenteric lymph nodes, in the abdominal wall and in the abdominal viscera.

The diagnosis is usually made post-operative from the stained sections or from the accumulation of mucus noticed in some cases on splitting the freshly removed specimen.

Our case differs from others found in the literature in that it was attached to the bladder wall by a thin pedicle, and there appeared to be very little, if any, involvement of the bladder wall.

It grew out of the bladder wall rather than in it and from a prognostic viewpoint might be considered clinically benign although, microscopically, a malignant tumor.

The patient has up to the present time shown no evidence of metastasis, has gained in weight, color and strength, and comes very reluctantly for examination, as he has no symptoms that trouble him.

The treatment of these tumors is obviously surgical, supplemented by some form of irradiation. The mode of attack depends on the extent and location of the tumor and on the presence or absence of metastases.

Practically all the reported cases have been excised, unfortunately without permanent benefit in most cases. Excision alone has not proven entirely successful, but there seems to be justification for the belief that future recurrences can be minimized, or possibly even prevented, by the application of radium.

We feel that the outlook in our case is rather encouraging owing to the limited involvement of the bladder wall, which appears to have been controlled by radium and fulguration.

REFERENCES.

1. Gardner, James A.: Clinical Results in Operations on Tumors of the Bladder by Various Operations for the Last Fifteen Years, Trans. Amer. Urol. Assn., 1915, pp. 165-225.
2. Bridoux, Henri: A Case of Adenoma of the Bladder with Remarks on The Pathology of the Affection, Amer. Jour. Urology, 1913, ix, pp. 514-522.
3. Chute, A. L., and Crosbie, A. H.: Mucous Cancer of the Bladder, Boston Med. and Surg. Jour., 1912, clxvii, pp. 583-5.
4. Ewing, James: Neoplastic Diseases, Phila., 1919, p. 842.
5. De Korte, W. E.: Adenoma of Bladder, Jour. Path. and Bact., London, vol. 22, p. 519, May, 1919.
6. Alexander, Samuel: Jour. Cutaneous and G.-U. Dis., 1891, March ix.
7. Green, N. W.: Gelatinous Carcinoma of the Bladder, Annals of Surg., 1915, lxii, p. 501-4.
8. Barringer, B. S.: Colloid Adenocarcinoma of the Bladder, Surg., Gyn. & Obs., January, 1920, p. 86.

32 North Street.

Vesical Tumors.

It is at least gratifying in performing radical operations in cases of vesical tumor to know that the possibility of a distant lesion is slight; this fact we believe justifies the radical procedure. It seems that under these circumstances the results of operation should be better. While local recurrence is very uncommon following radical operations for cancer of the breast, stomach and kidney, it is often found following operations for cancer of the bladder. If some method can be devised of reducing the local recurrences in these cases, the results will be better than those obtained by operations for cancer in other regions.—E. S. Judd and W. E. Sistrunk in *The Journal of the A. M. A.*

A FOREIGN BODY IN THE LUNG INOCUOUS FOR FORTY YEARS.

LOUIS G. KAEMPFER, B.S., M.D.,
Associate Laryngologist, Mt. Sinai Hospital,
NEW YORK CITY.

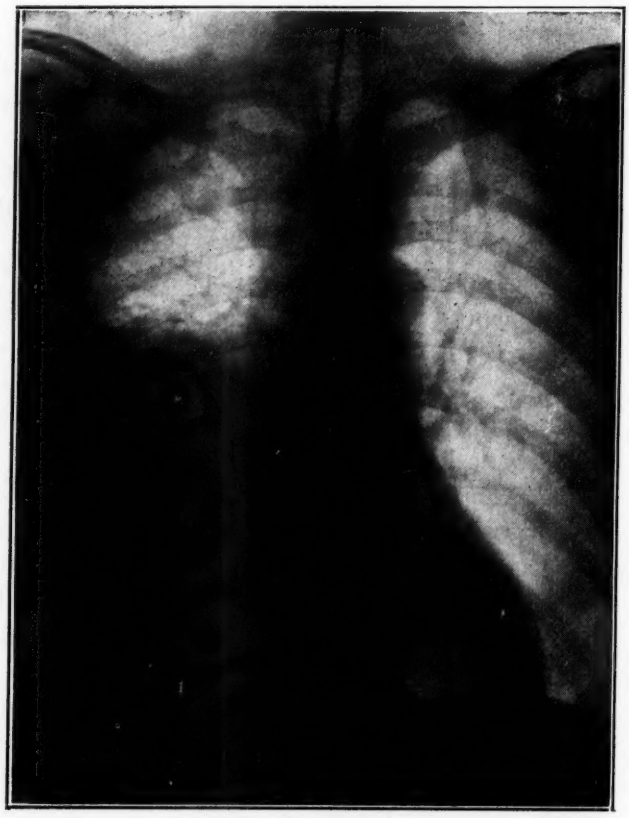
The following case presents a number of features of more than ordinary interest which serve as a reason for its incorporation into the literature.

C. H., widow, aged fifty-one, with a negative history other than the ordinary exanthemata of childhood, began to cough shortly before the onset of this, her last illness. The cough was slight and was classified by the patient as a cold. She paid no attention to it and made a trip from her home in New York to Newport News, Va. While there the cough became worse and she began to expectorate small amounts of mucoid sputum. She consulted a local practitioner who made a diagnosis of bronchitis. About three weeks before the fatal outcome her condition grew materially worse. Her cough became more productive. She was removed to a hospital. About this time the sputum became very profuse. It was greenish in color and of a very foul odor. Temperature elevations ranged between 100° and 104°. There was dullness from the angle of the right scapula to the base, as far forward as the anterior axillary line. Tactile fremitus and breath sounds were diminished. Numerous fine moist râles were heard over this area. Anteriorly, the breath sounds were exaggerated. A roentgenogram of the chest was made. The plates were not very clear but showed a shadow occupying approximately the lower half of the right chest. The patient said that her chest was aspirated and pus obtained. A later plate showed a dense vertical shadow about three inches long and a quarter of an inch wide at a distance of an inch to the right of the bodies of the vertebrae. The lower end of this shadow was not clear and was lost in the less dense shadow over the lower chest. It began, apparently, at the diaphragm and extended upward. A diagnosis of lung abscess and a possible foreign body was made.

The patient was brought to New York, where she was put into Mount Sinai Hospital. Her condition on arrival was not good but after twenty-four hours' rest she was considerably improved. There was slight dyspnea, increased on exertion. There was no cyanosis at that time. Her temperature elevations during the ten days she was in the hospital here ranged between 100° and 103°.

Bronchoscopy was performed under local anesthesia (20% cocain applied to the larynx and pharynx). The left lung was normal. The right upper and middle lobe branches showed no abnormalities. There was a profuse discharge of pus from all the lower lobe branch bronchi. The mucosa about their openings was congested and red. The pus was thin and droplets appeared within a few moments of their having been cleaned away by aspiration. The various bronchial orifices were cleaned and their lumina examined, but no foreign body could be seen. The examination lasted for about forty-five minutes and the patient's condition was not affected by it. The following day, she expectorated once a little blood-stained sputum. After forty-eight hours a second bronchoscopic examination was made. This did not last so long, nor was it so well tolerated as the first. No new facts were elicited.

The physical findings in her lungs were essentially the same as when she was first taken to the hospital, at the beginning of her illness. After her first few days in the hospital the breath sounds were not heard as far down as they had been on admission and the râles which had been dry, became moister. On her arrival in New York the sputum was purulent, profuse and foul-smelling. During the ten days before she died it decreased in amount, the odor became less foul, it was thicker and contained considerably more mucus.



Radiograph of chest showing abscess of lung, with foreign body. The shadow in the other lung is an *x*-ray catheter.

Before the second bronchoscopy the chest was aspirated. The needle was inserted between the seventh and eighth ribs in the posterior axillary line. Nothing was obtained.

Roentgenograms were made which substantiated the reports from the Newport News hospital. The edges of the heavy, vertical shadow were mathematically parallel and the shadow was equally dense throughout its extent. It was thought that the foreign body might be a fragment of knitting needle, but it was inconceivable that an adult could have inhaled such a body and be unable to give any history of the occurrence. The vertical position of the shadow, too, cast some doubt as to its having been inhaled. It was thought that a foreign body of that size would lodge

in a fairly large bronchus and would necessarily occupy a position in a line more nearly like that of the radiations of the bronchial tree. That view is borne out by the position of the *x*-ray catheter that can be seen in the left bronchus. It was suggested, also, that the foreign body might have been swallowed and have worked its way through the esophageal wall.

The diagnosis at this time was lung abscess due to foreign body and it was a matter of considerable chagrin on my part not to have found it. The patient was seen by Dr. Lilienthal with a view to exploration, drainage of the abscess cavity and removal of the foreign body. Her condition at this time was not as good as it had been and it was deemed advisable to wait for a time. For a week she ran a temperature between 100° and 102°. Her pulse ranged between 100 and 120 and was of fair quality. The dyspnea increased and the cough persisted. There was a slight duskiness of the skin, not observed before. The amount of sputum decreased and toward the end she brought up practically nothing.

The day before she died she was seen by Dr. Lilienthal again and an exploratory thoracotomy was decided upon. Her condition was not very good. During her stay in the hospital she had been a very difficult patient to handle. Among other things, she insisted upon getting out of bed to use the commode. During one of these times she went into collapse and died in a few hours.

The autopsy report follows:

Lungs: The right parietal pleura is about one cm. in thickness. There is an empyema consisting of about 700 cc. of thick, greenish, foul-smelling fluid. Almost the entire right lower lobe is gangrenous and there are multiple abscesses in the rest of the lung, varying from pin-point to half-inch in diameter. The trachea is reddened. The bronchi are not abnormally dilated. In the right lower lobe, about half an inch from the spinal column and immediately beneath the pleura is found a longitudinal cavity about five inches in length and about three-eighths of an inch in breadth which contains a slate pencil about three inches in length and an eighth of an inch in diameter. The left lung is markedly emphysematous. The bronchi contain a thick, greenish, foul-smelling fluid.

Esophagus: Normal.

In addition it should be noted that the pencil was entirely surrounded by thick connective tissue, both in its length and over its ends. There was considerable lung tissue between the large gangrenous lower lobe cavity and the pencil cavity. The bronchi were laid open and traced downward and none could be found communicating with the pencil cavity. No communication could be found between the two cavities and their appearance, too, was entirely different. One was patently of recent origin and the other had thick, hard, old, connective tissue walls. Examination of the esophagus and the adjacent pleura failed to show scars either old or recent. There was also lung tissue between the parietal and the pencil cavity.

The facts for consideration are:

(a) A slate pencil encysted in a cavity with thick connective tissue walls.

(b) A recent gangrenous lung abscess cavity, not communicating with the cavity containing the slate pencil and separated from it by more or less healthy lung tissue.

(c) A normal esophagus and mediastinum.

(d) Absence of any history of foreign body or any history of cough at any time before this illness.

As to the method of ingress of the foreign body: The absence of scars in the esophagus and mediastinum and the fact that there is healthy lung tissue and pleura in that part of the lung adjacent to the mediastinum and the foreign body seem to exclude the esophagus as the portal of entry. There remains then but the air passages as a means of entrance. The upper end of the cavity containing the pencil shows in the microscopic examination elastic fibers resembling the structure of the bronchial wall. It is quite likely that the pencil was inhaled and made its way through the bronchial wall into the least movable part of the lung. The lung abscess was recent and followed a bronchitis and bronchopneumonia.

From the appearance of the scar tissue around the pencil, its thickness and firmness, the foreign body must have been there a very long time. The patient also could not recall ever having had a slate pencil in her possession since she went to school. One must conclude from these facts that the pencil lay in her lung since childhood and inasmuch as she was over fifty years old when she died, forty years is a conservative estimate of the length of its tenancy. I believe that the pencil had no etiological bearing on the formation of the lung abscess.

PULMONARY ABSCESS

1. Abscess of the lung is a fairly common disease and is amenable to surgical treatment.

2. Pneumonia and inhalation of infected material are the most common causes.

3. A productive cough, dullness to percussion and a localized shadow on the *x*-ray plate are the most characteristic findings.

4. Abscess should always be considered in a differential diagnosis of pulmonary tuberculosis.

5. Late drainage doubles or trebles the operative mortality and morbidity.

6. A two-stage operation under local anesthesia is a relatively safe and satisfactory method.—C. A. HEDBLOM in *Minnesota Medicine.*

SARCOMA FOLLOWING INJURY. REPORT OF TWO CASES.

JOHN McGLINN, M.S., M.D.,
PHILADELPHIA, PA.

While sarcoma is a not uncommon lesion, cases where there is a direct relationship between injury and the growth are of sufficient interest to merit their publication. Two such cases came under my care at the Naval Hospital, League Island, Pennsylvania:

CASE I. Lieut D., was admitted to the hospital with the following history: While on board a United States cruiser he slipped in descending a ladder and fell, striking his left buttock on one of the lower steps. The injury gave him severe pain at the time and he was compelled to go on the sick list for several days. The buttock was bruised, but outside of the pain immediately following the injury, he suffered no inconvenience. The pain entirely disappeared in several days and he resumed active duty and suffered no further trouble from his injury. While on ship, he bathed under a shower bath. After nine months sea duty, he was given leave and for the first time subsequent to his injury, took a tub bath. He felt then as though the bottom of the tub were uneven. Standing before a mirror drying himself, he noticed for the first time some deformity of his left buttock. This consisted in an enlargement of the buttuck and the pushing of the gluteal cleft beyond the median line to the right side. He reported the matter to the ship's surgeon who also found a marked swelling of the left buttock.

He was referred to me for consultation and on rectal examination a hard mass, the size of an orange, was found occupying the left ischio-rectal fossa. In view of the history of the case and the absence of all symptoms, a diagnosis of possible encapsulated hematoma was made and an operation was advised. This was done in November, 1918. We found a large encapsulated tumor, the size of an orange, attached to the fascia covering the levator ani muscle and to the perirectal tissues. A histologic examination of the tumor showed it to be a spindle-cell sarcoma. The patient made an uneventful recovery from the operation. Subsequent to the operation, he was given intensive *x*-ray treatment by Lt. Henry Pancoast of the *x*-ray department of the University of Pennsylvania. The patient was next seen June 1, 1919. At that time there was no evidence of any recurrence of the growth.

He consulted me again about August 1, 1919, and I then found a definite nodule at the site of the former tumor. He was readmitted to the hospital and the growth removed under local anesthesia. The incision was left open and he was given intensive *x*-ray treatment. In about three weeks there was a recurrence of the growth. This growth, which was gelatinous, was removed under local anesthesia and eight needles of radium were inserted in the area about the growth, and were allowed to remain for 24 hours. There was no return of the growth for some months but the incision failed to heal. An *x*-ray study of the chest was made, by which, according to a roentgenologist, the plate showed definite matastatic involvement of the lung, but this opinion was not concurred in by another roentgenologist. Several other studies were made during the following year but no definite lung involvement was found, and except for a slight cough there were no symptoms therof. He had a local return of the growth about four months after radium was first used. He was given intensive radium and *x*-ray treatment, under which the growth would disappear but would shortly return after treatments were discontinued. He died December, 1920, of diffuse sarcomatosis.

CASE II. Fairweather, U. S. N., was admitted to the Naval Hospital, League Island, April, 1919, with a diagnosis of chronic synovitis of the left knee. He gave the following history: Six months before admission he struck his knee with a hatchet while opening some cases. When he was admitted to the hospital, his knee was greatly enlarged and there was evidence of fluid about the knee-joint. This proved to be a sero-sanguineous fluid, a bacteriological study of which showed it to be sterile. On more complete examination, there was found consolidation in both lungs. The diagnosis of synovitis was subsequently changed to tuberculosis of the left knee-joint and chronic pulmonary tuberculosis. The left knee was operated upon and a large amount of broken-down bone removed. Unfortunately, the specimens were mislaid and a pathological report was not obtained.

The patient was referred to me for consultation and when I saw the roentgenograms of the chest I felt that the pictures were those of malignant disease of the lungs rather than of tuberculosis. The knee-joint was reopened to obtain specimens for a microscopic examination. This showed a small, round-cell sarcoma. The *x*-ray plates were studied by members of the Philadelphia Roentological Society, who all agreed that the condition was one of malignancy of the lung. The patient presented at various times definite signs of fluid in the thoracic cavity. Repeated needling, however, failed to show free fluid. Coley's fluid was used, but the disease was so far advanced that no satisfactory results were obtained. The patient died, and the following conditions were found at autopsy:

The left lung was entirely replaced by sarcomatous growth. Several large areas of necrosis were present in the center of the lung. The right lung and pleura was also extensively involved with sarcoma. The liver was studded with small sarcomatous nodules.

In both these cases, the history of injury in relation to the tumor growth is very definite. The relation of traumatism to malignant disease is still more or less mooted. While there may be some question as to the relation of traumatism to epithelioma, there seems to be no doubt of a direct relationship at times between traumatism and sarcoma. It is well to bear in mind this relationship in dealing with growths when there is a history of previous local injury.

113 SOUTH TWENTIETH STREET.

A CASE OF FACIAL FISTULA DUE TO SUBMAXILLARY SIALOLITHIASIS.

LESTER R. CAHN, D.D.S.,
and JOSEPH LEVY, D.D.S.,
NEW YORK CITY.

While the great majority of cases of facial fistula are due to diseased teeth, there are, of course, some in which the teeth are innocent. The following report is illustrative of that type of facial fistula not due to dental disease:

Male; white; 41; chauffeur. About four years ago he noticed a swelling of the left cheek. There was no pain, but thinking that he had an alveolar abscess, he consulted a dentist. The affected side was roentgenographed (figure 1) and the lower left second molar condemned as the cause of the swelling, and forthwith extracted. The swelling persisted for some time after the extraction of the tooth, but gradually disappeared. After a time, occasional swellings would appear in the mouth, between the left side of the mandible and the cheek, discharge their

Fig. 1. Roentgenogram of lower molars. The second was removed.

contents and disappear. Two years ago a fistula appeared on the outside of the left cheek, from which there was an occasional discharge. The patient consulted several dentists and physicians. A new roentgenogram of the area from which the tooth was extracted proved to be negative. During all this time there was no pain, and the only discomfort that the patient suffered was the frequent swellings and the disagreeable appearance of the fistula. The patient now came under our care. A roentgenogram was made of the left side of the mandible, but this also gave us no information. His venereal history was negative.

We learned that previous to his becoming a chauffeur, he had spent most of his life on a farm, and that his greatest diversion was to pitch hay. About this time a hard brawny swelling appeared on his cheek next to the fistula. From the clinical appearance and from the history of having been a farmer, we suspected that he might be suffering from a mild actinomycosis, but we were unable to procure a specimen for microscopical examination. On general principles, potassium iodid was prescribed. Under this treatment the swelling gradually become smaller, although it did not disappear. Several times aspiration of the swelling was attempted, but no material for examination could be obtained.

On September 21, 1921, the patient came to our office suffering great pain. The submaxillary and submental regions were greatly enlarged, and there was a swelling under the tongue. This sublingual swelling aroused our suspicions and a roentgenogram was made, placing the film between the patient's teeth and letting him bite on it, and then directing the rays upward from beneath the chin. The picture revealed a calculus (figure 2).

On September 22nd the swelling under the tongue was incised and the stone removed from the submaxillary duct. The calculus was of the general shape of a canine tooth and 7/8ths of an inch in length (figure 3).

The next day the patient was much relieved. The swelling and the pain had subsided, and he was allowed to leave the hospital. One week later he was

Fig. 2. Roentgenogram showing calculus.

discharged from our care, the fistula having healed and the brawny swelling having entirely disappeared.

This case is interesting in that the fistula was in such a location that the sublingual gland was not thought of. If any of the salivary glands would have been judged the cause of the trouble, one would have been inclined to have suspected the parotid because of its proximity. The roentgenogram of the

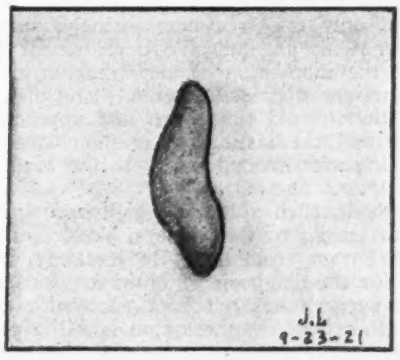


Fig. 3. Drawing showing actual size of salivary calculus.

tooth that had been extracted, showed that there was no cause for its removal.

In fistula of the face it is well to make a thorough examination and arrive at an accurate diagnosis, so that no teeth are needlessly sacrificed.

128 WEST 118TH STREET.

American Journal of Surgery

PUBLISHED BY THE

SURGERY PUBLISHING CO.

J. MacDonald, Jr., M. D., President and Treasurer

PUBLICATION OFFICE
STAR-GAZETTE BUILDING, ELMIRA, N. Y.

ADMINISTRATION AND EDITORIAL OFFICE
15 EAST 26TH ST., NEW YORK, U. S. A.

where all communications intended for the Editor, original articles, books for review, exchanges and business letters should be addressed.

SUBSCRIPTION PRICE, TWO DOLLARS
FOREIGN, TWELVE SHILLINGS.

Original Articles and Clinical Reports are solicited for publication with the understanding that they are contributed exclusively for this journal.

It is of advantage to submit typewritten manuscript; it avoids errors.

CHANGE OF ADDRESS. Subscribers changing their address *should immediately notify us of their present and past locations. We cannot hold ourselves responsible for non-receipt of the Journal in such cases unless we are thus notified.*

ILLUSTRATIONS. Half-tones, line etchings and other illustrations will be furnished by the publishers when photographs or drawings are supplied by the author.

SPECIAL NOTICE TO SUBSCRIBERS

The "American Journal of Surgery" is never sent to any subscriber except on a definite written order. Present and prospective readers please note this.

WALTER M. BRICKNER, M. D., F. A. C. S., Editor.
New York City

ELMIRA, NEW YORK, JANUARY, 1922.

BRAIN TUMORS.

Easily among the outstanding, stimulating publications in medical journals during the year just past is the article on "The Treatment of Brain Tumors" by Walter E. Dandy of Johns Hopkins Hospital, in *The Journal of the American Medical Association,* December 10, 1921, for

"The purpose of this paper is to present a new and hopeful outlook in the treatment of brain tumors. It deals, not with a new form of treatment, for there can be, at least for the present, only one treatment, namely, surgical; but it deals rather with an intensive development of this field, largely by the innovation of new diagnostic methods [he refers to but one diagnostic method] and also by an entire reconsideration of old time-worn and unpractical operative procedures, and the institution, in their stead, of surgical efforts, which are directed solely to the eradication of the cause. . . . . .

New methods, such as those which have transformed the diagnosis of lesions of the kidneys, bladder, ureter and gastro-intestinal tract from doubt to certainty, have not been developed for the diagnosis of brain tumors. And, as a result, brain surgery has not kept pace with the rapid advances in other lines of surgery; it is still a crude and bungling effort. And how can it be otherwise when far more than half of all brain tumors have not been localizable (but operative procedures are carried out, notwithstanding)? Under such circumstances, satisfactory results must be fortunate occurrences attained in spite of the necessary indecisions, mistakes and inefficient methods which prevail."

The accurate, early localization and, in many cases, the complete removal, of brain tumors is not merely an ideal; as Dandy presents it, it is a programme of accomplishment already well within our reach. Admitting that "the extensive silent areas of the brain make the localization of tumors by objective signs, both late and difficult," Dandy nevertheless does not hesitate to assert that *"every tumor can and should be localized at once, and a large percentage of these tumors can be completely removed in the early stages."* [italics ours.] This is the very striking, the stimulating message he conveys,—the essence, indeed, of his article. It comes as a statement so bold and unequivocal that it strikes at the very basis of cranial diagnostics. If it be true, then assuredly as, indeed, Dandy intimates, our neurologists and neuro-surgeons are blundering along with insufficient or too tardy diagnostic methods. It is, in fact, a common experience that obscure brain cases may be observed by competent neurologists over a considerable period of daily, painstaking examinations before a diagnosis of tumor is arrived at, that at operation by an equally competent neuro-surgeon no recognized sign of tumor is found, and that, at autopsy, a neoplasm is discovered in an unexpected region of the brain. As Dandy says, "in the vast majority of cases, even in the comparatively late stages of the disease, all the resources at our command will be exhausted before a diagnosis, and particularly a localization, can be determined with certainty."

From the diagnostic side, "the milk in the cocoanut" of Dandy's paper is in the succeeding sentence, which we italicize: *"In every case in which a careful anamnesis and neurologic and roentgenologic examinations are of no avail (and this group comprises half the cases of brain tumors), the tumor can be diagnosed and located or its existence eliminated by cerebral pneumography."* He refers to his very valuable procedure of pneumo-ventriculography which he first described in *Annals of Surgery,* July, 1918. By the deformity or dislocation of one or more ventricles, or the internal hydrocephalus, which it produces (as revealed by pneumo-roentgenograms) the presence and location of a brain tumor is determined.

Dandy says "I have now had opportunity in more than 200 injections to locate tumors in every part of the brain, and I have yet to fail to make an accurate localization, nor have I failed to find this tumor at operation." This is, indeed, a record of accomplishment, and an eloquent plea for the more general employment of pneumo-ventriculography for diagnosis and for localization. Its value as a guide to the surgeon is emphasized in the following statements:

"Some of these tumors have been far below the surface of the brain; in fact, so far, that there has not been the slightest change in the surface of the cerebral or cerebellar convolutions or sulci to suggest that a tumor was beneath. In other words, the evidence from cerebral pneumography

has been so absolute that we were sufficiently certain of the tumor's location as to make a transcortical incision of varying depth until the tumor was exposed at the position it was expected to be found. At times, it has been possible completely to remove such growths, when, except for the pneumographic record, there would have been absolutely no other way of knowing the situation of the growth. In many comatose patients the localization has been made and the tumor successfully removed."

Unfortunately, however, Dandy does not tell us in how many of these 200 cases the findings were negative, nor by what "follow-up" or "control" he determined that, indeed, no tumor was present in these instances of negative or normal ventriculograms. It must be assumed that in all of these 200 cases of ventricular air injection there was suspicion of a brain tumor sufficient to justify the procedure. How can Dandy know that in all the cases in which the roentgen findings were normal there was no tumor unless he followed them to autopsy or, perchance, to operation elsewhere? Is he justified, otherwise, in his assumption that when ventriculography gives no indication of a tumor there is no tumor? And if he is not justified, how can we accept his dictum that "every tumor can and should be localized at once"?

In this article Dandy has done a useful service in severely criticizing the much too general employment of so-called "palliative" and "exploratory" operations for unlocalized brain tumors. That corpus callosum puncture is a futile procedure in internal hydrocephalus, that spinal puncture is hazardous in brain tumors, we believe that most surgeons and neurologists will heartily agree. We commend, too, the limitations he puts upon the indications for decompressive operations for brain tumors. Suboccipital decompression—always a serious operation—is palliative only of cerebellar tumors. "In all other cases of brain tumor, a cerebellar decompression carries an appalling danger to life and serious injurious effects when life is spared." Cerebello-pontine tumors are "so firmly embedded as to be practically immobile, and to be deprived of any benefit, either direct or indirect, from the decompression." Subtemporal, like suboccipital, decompression should never be performed, according to Dandy, for the relief of an unlocalized tumor, since it masks the symptoms until the growth is so large that the development of localizing signs comes too late. He makes it quite clear, too, that subtemporal decompression is worse than useless when hydrocephalus has developed. In that case exploratory craniotomy is also contraindicated. Of cranial "explorations", Dandy's criticisms are severe, indeed. Since "it is now possible to diagnose and localize practically every tumor, and in the early stages" . . . . "exploratory craniotomies for brain tumors are now scarcely ever indicated."

" . . . . . there is far less mortality after removal of tumors in the cerebral hemispheres or cerebellum than after fruitless operations in which the tumor has been sought, but not found, or in which the tumor has been found and could not be removed. The big cause of death in these cases of cranial surgery is an acute exacerbation of the intracranial pressure, which results from direct or indirect injury to the brain by the operative procedure and which is added to the original pressure existing before the operation."

In ventricular pneumography Dandy has contributed a very valuable addition to cranial diagnostics—a procedure that will certainly be helpful in determining the presence and location of brain tumors. That he has employed it even in many comatose patients and successfully removed their tumors, suggests that other neuro-surgeons have not often enough availed themselves of a useful diagnostic aid.

But that "when all other signs and symptoms fail in the localization, cerebral pneumography will make the diagnosis and localization with precision and without equivocation," must be established by the corroborative testimony of other observers. Even the Wassermann test, which is a biochemical reaction, and not merely an indirect physical sign subject to interpretation, cannot always be accepted "without equivocation," especially when the reaction is negative. That "when a tumor is not present, it can be excluded by the same method" (cerebral pneumography) may or may not be true, but the positive diagnostic value of such a negative finding cannot be accepted without evidence that has not yet accumulated. Dandy vouchsafed none whatever. He would have been more convincing if he had appeared to be less sure.

THE GORGAS MEMORIAL INSTITUTE OF TROPICAL AND PREVENTIVE MEDICINE.

Of great interest to the medical profession and to all others concerned in public health and sanitation is the recent announcement of the plans of the Board of Directors of the Gorgas Memorial for the establishment of an institute in the City of Panama for research and the extension of means of prevention of tropical diseases, as a memorial to the late William C. Gorgas, Surgeon General of the United States Army, who conquered yellow fever and malaria in the canal zone and conclusively demonstrated that health, even in the tropics, is a purchasable commodity.

The credit for the conception of the proposed Gorgas Memorial Institute belongs to Dr. Belisario Porras, the President of the Republic of Panama who, in the name of his government, has tendered the site, a building, and all required equipment, valued at approximately $500,000. At the request of Dr. Porras, Admiral Braisted, formerly Surgeon General of the United States Navy, with the cooperation of others equally interested in making this Memorial possible, incorporated the Gorgas Memorial Institute for the purpose, in addition to directing the scientific work, of raising an endowment fund of five million dollars for maintenance. The following officers were elected: President, Rear Admiral W. C. Braisted, U. S. Navy (retired); Vice-President, Dr. Franklin Martin, Secretary General, American College of Surgeons; Directors: Dr. Belisario Porras,

President of the Republic of Panama (founder); Dr. A. S. Boyd, Chief of Surgical Service, Santo Tomas Hospital, Panama; Surgeon General Hugh S. Cumming, United States Public Health Service; Surgeon General Merritt W. Ireland, United States Army; Honorable John Bassett Moore, Judge of the International Court of Justice, The League of Nations; Honorable Leo S. Rowe, Director General, Pan-American Union; Surgeon General E. R. Stitt, United States Navy.

Dr. Richard P. Strong of Harvard University, chosen to head the Scientific Board, will be assisted by Admiral E. R. Stitt and Lieutenant Colonel J. F. Siler. Other members of the Scientific Board will be announced at an early date. The Advisory Board, of which Secretary of State Hughes is Honorary Chairman, consists of the diplomatic representatives of all the Central and South American countries and representative committees of the leading national medical and surgical associations, public health groups, and many other societies by which Gorgas was beloved.

The proposed Memorial will be built adjacent to the new two-million dollar Santo Tomas Hospital, and the use of its complete facilities has been tendered the Gorgas Memorial to aid in the launching of the work.

The Memorial Building itself will consist of a dignified classic structure patterned after the lines of the Pan-American Union in Washington, D. C. It will house the laboratories and provide facilities for the teaching of students from the United States and from the various tropical countries. Among the diseases which will be studied in addition to yellow fever and malaria, are dengue, pellagra, beriberi, leprosy, cholera, and the various mycoses.

Great, indeed, are the humanitarian benefits to accrue from the establishment of this memorial to General Gorgas. Its complete success means the fulfilment of Gorgas' greatest desire, that of eliminating devastating tropical diseases. The Institute will be, moreover, a recognition of the vital rôle that scientific medicine played in the construction of the Panama Canal.

Book Reviews

A Guide to Urinary Diseases. By ADOLPHE ABRAHAMS, O.B.E., M.D. (Cantab), M.R.C.P. (Lond.), Physician to the Royal Chest Hospital; Assistant Physician to Westminster Hospital; Physician to Out-Patients, Hampstead General Hospital; Late Major R.A.M.C., and District Consulting Physician Aldershot Command; and A. CLIFFORD MORSON, O.B.E., F.R.C.S. (Eng.), Surgeon to Out-Patients, Hampstead General Hospital; Assistant Surgeon, St. Peter's Hospital for Urinary Diseases; Consulting Genito-Urinary Surgeon to St. John's Hospital, Blackheath, and to Whipp's Cross Hospital; Late Temporary Surgeon R. N. Duodecimo; 120 pages. New York: LONGMANS, GREEN & Co.; London: EDWARD ARNOLD & Co., 1921.

The purpose of this book, according to the authors, is to assist the general practitioner in identifying lesions of the genito-urinary tract from the symptoms that are present. In accomplishing this, the authors have divided their treatise into two parts. The first, and larger of these, is a discussion of symptoms as such, with emphasis on the significance of various symptoms viewed singly, and in their commonest combinations. The discussion is conveniently presented, and valuable diagnostic suggestions are easily accessible. However, some of the clarity of presentation in this part of the volume is clouded by the fact that the subdivisions are not segregated by large type, or in any other way, so that they merge into one another, and the reader frequently finds himself slipping from one into the next, unawares. Improvement in this respect, in any subsequent edition, would much increase the facility with which the work could be used for reference purposes.

The second section concerns itself with symptomatic and therapeutic outline of the commonest diseases of the genito-urinary system, such as nephritis, enlarged prostate, etc. The authors state, in their preface, that "only the barest reference has been made to those methods of investigation which demand the resources of a well equipped laboratory", but this omission detracts so materially from the completeness of the chapter on nephritis, in which diagnosis and treatment are discussed without regard to blood chemistry, that the value of this chapter is doubtful. Digitalis is prescribed as a diuretic, without consideration of the degree of normality of the heart; this should be corrected in a subsequent edition.

This manual should prove very useful to practitioners as a guide to the interpretation of symptoms, and the careful summing up of such interpretations into diagnosis.

Traité Chirurgical d'Urologie. Par FÉLIX LEGUEU, Professeur de Clinique des Maladies des Voies Urinaires à la Faculté de Médicine de Paris; Chirurgien de l'Hôpital Necker. *Deuxième Édition.* Deux volumes en octavo; 1882 pages; 860 gravures (61 en couleur). Paris: FÊLIX ALCAN, 1921.

The first edition of this cyclopedic work appeared in 1910 in a single large volume of nearly 1400 pages. Since then (1912) Legueu has succeeded Guyon in the professorship of genito-urinary surgery, placing at his disposal the enormous material of the Clinique de Necker. This second edition—delayed in preparation by the war—is larger than the first by about 500 pages and more than 150 new illustrations, and is published in two large volumes.

A critical review of so extensive a treatise would be a considerable undertaking and would interest only specialists familiar with French. It will suffice here to indicate some of the newer material incorporated. This includes a monograph (by Maingot) on roentgenography of the urinary tract, discussion of the methods of determining kidney function, adrenal and pararenal tumors, and perirenal hematoma. The section on cystoscopy has been much augmented as have also those on traumata of the urinary tract and foreign bodies in the bladder, the two latter incorporating the author's five years of experience in war surgery. This has also furnished new material for wounds and repairs of the ureter. Transperitoneal repair of vesico-vaginal fistula is also described in this edition.

Bibliographic references are very numerous, but they appear only as foot-notes. There is no bibliographic index and no authors' index.

Studies in Deficiency Disease. By ROBERT MCCARRISON, M.D., D.Sc., HON. LL.D. (Belf)., Fellow of the Royal College of Physicians, London; Lauréat de l'Académie de Médicine, Paris; Honorary Surgeon to the Viceroy of India; Lieutenant-Colonel, Indian Medical Service. Imperial octavo; 270 pages; illustrated. London: HENRY FROWDE and HODDER & STOUGHTON, 1921.

It is probable that books on the vitamines and deficiency diseases will appear in the course of the next few years in ever increasing numbers, until we know more definitely the status which these unidentified food factors should hold in our dietaries.

The book of McCarrison is based largely on the work which the author carried out under difficult conditions in India. It is divided into four parts: the first describes the scope of the inquiry and the experimental methods employed; the second contains a brief summary of the present state of our knowledge of vitamines, and reviews the symptomatology of the deficiency diseases; the third, which goes into great detail and has developed from the studies of the author, relates to the morbid anatomical results of defective diet and to the special pathological changes which such deficiencies bring about; in the fourth part an attempt is made to correlate some practical applications of these studies to the prevention and cure of disease. It will thus be seen that an appeal is made to the interest of both the investigator and the practitioner of medicine.

One of the striking features of the work is its personal character and lack of conformity to previous treatises on this subject. McCarrison has given particular attention to the relation of the endocrine glands to deficiency disorders, studying the alteration in the weights of the various glands and their histo-pathological changes in experimental defi-

ciency diseases. The reproductive organs, the thyroid, parathyroid, pituitary and adrenal glands are considered minutely from these viewpoints. The entire study concerns itself more particularly with disturbances brought about by a lack of the so-called water-soluble vitamine, the effect of a lack of the two other established vitamines, the fat-soluble and antiscorbutic vitamines, being given far less consideration.

The book contains a large amount of data which can be found in no other work, and should be interesting and stimulating to those who are investigating this subject, as well as to others who wish to keep abreast with the advances made in this new field of knowledge. The press work and the illustrations are exceptionally good.

The Submucous Resection of the Nasal Septum. By W. Meddaugh Dunning, M.D., Consulting Otologist, Fordham Hospital and Manhattan State Hospital, N. Y.; Consulting Laryngologist, Ossining City Hospital, Ossining, N. Y., and The Alexander Linn Hospital, Sussex, N. J.; Assistant Surgeon, Manhattan Eye and Ear Hospital, N. Y.; Surgeon, Bronx Eye and Ear Infirmary, N. Y. Small octavo; 97 pages; 25 illustrations. New York: Surgery Publishing Co., 1921.

This small manual is a very practical exposition of the modern operation of submucous resection of the nasal septum. Succinctly and clearly Dunning describes the technic of the operation—especially his own mode of procedure—in ordinary and in difficult cases, and the anatomy and physiology of the nose on which the operation is based. The illustrations are original, numerous and well-drawn. Much of the book appeared serially in the Journal, January, February and March, 1921, but this matter has been enlarged and revised, and three short chapters have been added to it.

A Guide to Diseases of the Nose and Throat and Their Treatment. By Charles A. Parker, F.R.C.S. (Edin.), Consulting Surgeon to the Throat Hospital, Golden Square; and Lionel Colledge, M.B., F.R.C.S., Surgeon to the Ear and Throat Department, St. George's Hospital, and to the Throat Hospital, Golden Square. *Second Edition.* Octavo; 583 pages; illustrated. London: Edward Arnold, 1921.

The purpose of this book is to assist post-graduate students of diseases of the upper respiratory tract. It is based upon lectures given at the Throat Hospital, London.

The authors discuss etiology, chiefly from the point of view of preventive treatment, describe the gross pathology sufficiently to aid in diagnosis, and emphasize whatever symptoms require special treatment, giving a detailed account of various methods. The book is fully illustrated with drawings and photographs and contains many useful prescriptions. Of special note are the chapters on the complications occurring in the course of the infectious granulomas. The work shows care in preparation and should prove of much value.

A Text-Book of Surgical Anatomy. By William Francis Campbell, A.B., M.D., F.A.C.S., Brooklyn, New York, Surgeon-in-Chief, Trinity Hospital; Sometime Professor of Anatomy and Professor of Surgery, Long Island College Hospital; Consulting Surgeon, Methodist Episcopal, East New York and Brownsville, Coney Island, Swedish, Jamaica, and Zion Hospitals. *Third Edition.* Octavo; 681 pages; 325 original illustrations. Philadelphia and London: W. B. Saunders Company, 1921.

This useful and well-illustrated work has been before the profession since 1908. In this, the third, edition the text has been submitted to general revision and several illustrations have been added. Important matter has been incorporated in the section on the surgical anatomy of the hand, including material from Kanavel's well-known studies.

While this work is not a complete treatise on surgical anatomy it is, as it was probably intended to be, an admirable guide to the young surgeon. It aims to impress upon him that "anatomic accuracy is the keynote of surgical technic" and that the perfected art of surgery is to accomplish its ends "with the least amount of anatomic derangement and the least disturbance of normal function." The text is written in a style commendably crisp, concise and lucid. It is nowhere discursive but, on the contrary, aims at driving home important facts in a manner that makes them easily remembered. The illustrations have been planned with the same object in view, e. g., such schematic drawings as figures 80, 87, 101. The legend under figure 127 is quite nemonic: "The glenoid cavity, the meeting place of three heads—bony head of humerus, long head of biceps, long head of triceps."

The Early Diagnosis of the Acute Abdomen. By Zachary Cope, B.A., M.D., M.S. Lond., F.R.C.S. Eng., Surgeon to Out-Patients, St. Mary's Hospital, Paddington; Surgeon to the Bolingbroke Hospital, Wandsworth Common; Late Hunterian Professor, Royal College of Surgeons. Octavo; 223 pages; illustrated. London: Henry Frowde and Hodder & Stoughton, 1921.

This rather small book contains the largest volume per cent. of useful information and valuable material of any book we have read in a long time. It is an interesting and well constructed plea for a more analytical and less orthodox view of mild and uncertain symptoms of acute abdominal conditions. Several diagnostic points are introduced which the author believes have not been described before, and many to which, he believes, sufficient attention has not been paid, are especially emphasized. There are 28 diagrammatic illustrations. Attention is called to the title, which refers to "the Acute Abdomen." It is a pity to lend the dignity of a book title to such medical slang. There is, of course, no such thing as an acute abdomen. The book might better have been called: "The Acutely Diseased Abdomen."

Ephraim McDowell, "Father of Ovariotomy" and Founder of Abdominal Surgery. With an Appendix on Jane Todd Crawford. By August Schachner, M.D., F.A.C.S., Louisville, Kentucky. Octavo; 331 pages; illustrated. Philadelphia and London: J. B. Lippincott Company, 1921.

The memory of Ephraim McDowell has gradually been rescued from oblivion. Dr. L. D. Gross in 1861 and 1879 published his careful researches on McDowell. In 1890 his granddaughter, Mary Young Ridenbaugh, with the cooperation of many well known medical men, carefully and lovingly compiled the biography of "The Father of Ovariotomy".

The present work is from the pen of Dr. August Schachner, who has by painstaking and laborious research run down forgotten clues, unearthed new records and sifted the wheat from the chaff. His aim has been not only to picture McDowell's life, but also to give a portrait of the life and conditions in Transylvania at the beginning of the last century. McDowell's ancestors, relatives, friends, enemies and contemporaries are pictured; he is followed to Scotland where he studied under John Bell, and his development and activities in Danville, Kentucky, are traced from the beginning to the end. A countless number of personages, mainly medical contemporaries, are sketched. This huge number of dramatis personae are of interest, but they serve to disorient and bewilder even the most attentive reader, while the countless repetitions serve somewhat to discourage him.

A sincere and heartfelt tribute is paid by the author to the intrepid woman, Jane Todd Crawford, who rode 60 miles through the wilderness, supporting her hugely enlarged abdomen against the saddle horn in order to submit to "the experiment," as McDowell termed his operation.

The endless recriminations, disputes, quarrels arising from claims as to priority, vituperations, etc., are set forth at great length. They form as sordid a collection as similar incidents of more recent date.

In the words of the author: "The story of the first ovariotomy, expressed in a few words, is that, after a varied experience covering a period of fourteen years, during which he learned to rely upon his own common sense and courage, in addition to his knowledge of anatomy and the principles of surgery, McDowell was confronted by an ovarian tumor, not in its early stage, but in the latter stage of its development. Instead of dodging the issue, after a prolonged discussion, and an exhibition of the case, as had

been the custom in metropolitan centers up to that date, and even for some time thereafter, this country doctor, who through self-reliance had grown accustomed to meet surgical difficulties fully and fairly, began at once to plan the operation.

"As it has been said, with his 'mother wit' and his courage, freed from the restraining influence of others, he, singly and alone, successfully solved the problem of ovarian tumors. The operation which he performed has in its basic features remained as he gave it to us; and aside from the refinements incident to surgery in common, will remain so until the end of time. Therefore, in view of its unbounded importance, it is time that all references to his claims should be absolutely free from all possible equivocation."

The Life of Jacob Henle. By VICTOR ROBINSON, M.D., Formerly Editor of the *Medical Review of Reviews;* Editor of *Medical Life.* Octavo; 117 pages; illustrated. New York: MEDICAL LIFE COMPANY, 1921.

At first blush, the life of Jacob Henle is not one to stimulate a biographical essay. There was little of the romantic in his career. He had no great quarrels, although one incident in his Bonn days shows that he could fight when aroused. There was nothing of the mystic or the temperamental in him. He stuck to his work as a pure anatomist and appears to have been little interested in the humanities, except in music. Although his contributions to medical science performed in the quiet of the laboratory are immense and important, none of them was of the kind that tingle the imagination. He is a splendid example of the academic German scholar, hard-working, single-track-minded, unimaginative, plain-spoken and quiet-seeking.

Despite these biographical hazards, this story of Henle's life proved to be of considerable interest. The life history of every great man, no matter how prosaic his career, is always interesting if we are brought into close intimacy with his individuality. This Dr. Robinson has succeeded in doing by many personal touches and especially by extracts from Henle's correspondence. The author's style of writing is sometimes irritating. In attempting to be vivid and clever he affects a curiously aphoristic manner of writing which is more commonplace than not and sometimes even exceeds the bounds of good taste. For instance, on page 15, "when William (Henle) first looked at Jacob, he saw before him a dressed up child instead of a naked fetus smeared with vernix caseosa." This is not even witty.

Two Discourses Dealing With Medical Education In Early New York. By SAMUEL BARD, M.D., Professor of the Practice of Medicine in King's College; Later President of the College of Physicians and Surgeons. Duodecimo. New York: COLUMBIA UNIVERSITY PRESS, 1921.

Dr. Samuel Bard (1742-1821) was one of the most conspicuous figures in the earlier medical life of New York City. In this little volume are reproduced, not merely reprinted, his "Discourse upon the Duties of a Physician" delivered at the 1769 Commencement of King's College (now Columbia University), where he was Professor of the theory and practice of medicine; and his "Discourse on Medical Education" at the 1819 Commencement of the College of Physicians and Surgeons (New York), of which he was then president.

The Fundamentals of Bacteriology. By CHARLES BRADFIELD MORREY. B.A., M.D., Professor of Bacteriology and Head of the Department in the Ohio State University, Columbus, Ohio. *Second Edition.*. Duodecimo; 320 pages; 177 illustrations. Philadelphia and New York: LEA & FEBIGER, 1921.

This book is designed to accompany the work of the first semester in bacteriology at the Ohio State University, in which the laboratory plays no part. It is an interesting, complete and lucid exposition of the fundamentals of bacteriology and immunology. No details concerning the life histories of the different varieties of bacteria are given, the author believing that these matters are studied to better advantage in connection with a laboratory course, after the basic principles of the subject are well understood. Of particular note, is the very careful gradation, throughout, between the general and the particular. This tratise is so skillfully constructed that it should serve well anyone who wishes a comprehensive résumé of the entire field.

Surgical and Gynecological Nursing. By EDWARD MASON PARKER, M.D., F.A.C.S., Surgeon to Providence Hospital, Washington, D. C.; and SCOTT DUDLEY BRECKINRIDGE, M.D., F.A.C.S., Gynecologist to St. Joseph's Hospital. Lexington, Kentucky. *Second Edition.* Octavo; 425 pages; 134 illustrations. Philadelphia and London: J. B. LIPPINCOTT COMPANY, 1921.

This impresses us as an excellent and well-balanced book. Without being bulky, it contains much information that similar works fail to provide.

This edition has been brought quite up to date, and in it will be found instructions for nursing in anoci-association, in modern methods of fracture treatment, and in Carrel-Dakin technic.

Collected Papers of the Mayo Clinic, Rochester, Minnesota. Edited by MRS. M. H. MELLISH. *Volume XII,* 1920. Imperial octavo; 1392 pages; 446 illustrations. Philadelphia and London: W. B. SAUNDERS Co, 1921.

This handsome volume represents the literary output, during 1920, from the Mayo Clinic and the Mayo Foundation, in medical journals—from which the papers have been collected and, as before, arranged regionally. It contains a wealth of valuable material, surgical and medical; and, since these articles are often referred to in our current literature, it is convenient to have them thus collected for ready reference. The artistic excellence of the illustrations, which is uniform in articles from the Mayo Clinic, adds much to their value as well as to the attractiveness of these volumes.

Progressive Medicine. A Quarterly Digest. Edited by HOBART AMORY HARE, M.D., LL.D., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College, Philadelphia; Physician to the Jefferson Medical College Hospital, etc. Assisted by LEIGHTON F. APPLEMAN, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia; Ophthalmologist to the Frederick Douglass Memorial Hospital and to the Burd School, etc. *Volume III,* 1921. Octavo; 92 pages; 2 illustrations. Philadelphia and New York: LEA & FEBIGER.

This number contains many excellent reviews. "Obstetrics" by E. P. Davis covers the literature of the past year quite fully. The author is to be commended for his excellent habit of not condensing too greatly the articles which he reviews. This fault is too prevalent among reviewers. In "Diseases of the Thorax" by O. H. P. Pepper, the author, it seems to us, has not left out much of any importance; his review is especially valuable because it is tinged everywhere with subtle critical comment. We are glad to see Krogh's work on the Capillaries reviewed. These researches are so important that they should be a matter of common knowledge. There is also an excellent summary of the symposium on subacute bacterial endocartitis held last year in England. "Dermatology and Spyhilis" by J. T. Schamberg is extremely informative, especially in regard to the newer researches on eczema and the use of the various arsenical synthetic compounds in syphilis. "Diseases of the Nervous System" by Spiller contains an exceptionally good review of epidemic encephalitis. He favors the findings of Loewe and Strauss who discovered that this disease is due to a filterable organism.

The Surgical Clinics of North America. August, 1921, *Volume* 1, *Number* 4, Chicago Number; October, 1921, *Volume* 1, *Number* 5, Mayo Clinic Number. Octavos; pages 935-1529; illustrated. Philadelphia and London: W. B. SAUNDERS Co.

These two numbers of this interesting publication both contain much excellent material, well worth reading. These publications are by no means merely a poor substitute for personal visits to surgical amphitheaters. In their published form—carefully edited and well illustrated—the "clinics" provide matter for careful digestion at one's leisure that is often missed or actually omitted in the operating room.